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ABSTRACT

Arguing that a systems theory can be applied to the description and analysis of families and other close relationships, this paper first describes a method for coding verbal interaction that involves three steps: categorizing messages according to grammatical form and response mode, assigning control directions to those categories, and combining message control directions to form transactional types. The paper then describes the problems and choices involved in developing a method for nonverbal coding. The relational rules and patterns involved in these coding methods are described as indicants of the quality of the relationship. A methodology for integrating the verbal and nonverbal control codes is then presented for identifying and indexing relational patterns. Finally, a case study is used to relate the patterns indexed by integrating the control codes for speaker and listener to system maintenance and entropy. Transcripts of conversations from the case study and extensive tables of data are appended. (HOD)

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SPEECH COMMUNICATION ASSOCIATION

CODING VERBAL AND NONVERBAL MESSAGES
OF RELATIONAL CONTROL

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The relational approach to family communications assumes that people do not relate and then talk, rather they relate in talk, (Duncan, 1967). The exchange of messages is the relationship (Bateson, 1972). The process of exchanging messages is not predetermined by socially prescribed roles or personality traits do not predetermine the exchanging of messages, but the exchange itself becomes a formative process in its own right (Blumer, 1969). Relationships, therefore, emerge from the exchange of messages; the factuality of a relationship is its shape, not its content (Duncan, 1968).

In everyday conversation, as well as in the language of the social scientist, there are references to the structural shape of relationships. However, these references tend to assume that explanation of the patterns can be found within the communicators; e.g. extroverts dominate others. But, these structural abstractions are only known and knowable through the discovery of redundant, interlocked cycles of behavior. Relationships emerge through continuous negotiation and co-definition rather than being unilaterally "caused" by the personal qualities and/or social role prescriptions. Of course, any individual and/or social context and/or message can propose a relational pattern (relationship) but by itself cannot establish one. The proposal must be accepted and/or negotiated to acceptance by the other person, or the other interactant.

Given this conceptualization of relationships, the methodological problem becomes how to describe the redundant cyclical patterns. A research problem becomes the development of typologies and procedures which index the interaction process. Recent research by Rogers and Farace (1975), Rogers and Millar (1979) and Rogers, Courtright, and Millar, (1980) has attempted to develop a reliable, usable method for describing communication structure (relational shape) of interpersonal relationships using husband-wife interaction as the subject of inquiry. The assumption underlying research into structure has been that a viable methodology for coding interaction is a first step to developing a description of interactive patterns. Descriptions of patterns is a necessary step toward translating metatheoretic assumptions from systemic approach into testable descriptions of communication dynamics. The purpose of this portion of the paper is to describe a verbal and a nonverbal method for coding interaction.

Although, several generic dimensions of relationship have been reported in the literature, our interest focuses upon the control dimension for two reasons. The first reason grows from the work of Bateson (1951) and Watzlawick et al (1967) arguing that all messages carry both content and relational characteristics. The content refers to the referent of the message and the relational characteristic refers to the reciprocal rules defining the nature of the relationship between the interactants. The key to understanding a relationship, therefore, rests

in the relational dimension since the reciprocal rules specify who has the right to do what to whom at any given moment. The second reason to focus on control rests upon the assumption that control is a prerequisite to the development of a relational system (Millar, Rogers-Millar and Villard, 1977). Since control has to do with the "expected acts of deference and demeanor" (Danzinger, 1976) and to how the two participants are going to behave in each other's presence, the control dimension of a system addresses who has the right to direct, constrain, and define the actions of the interpersonal system. Developmentally then, control is the most basic relational dimension because if the question of direction constraint in definition is not resolved interactions probably will not continue nor messages continue to be exchanged.

VERBAL CODE

Three progressive steps were involved in deriving transactional measures of control. First, each verbal message was categorized according to grammatical form and response mode. Second, the control directions (one-up, one-across, one-down) were assigned to those categories. Third, the message control directions were combined to form transactional types.

Following Sluzki and Beavin's (1965) premise that the control dimension of the message resides in both the grammatical and the response form, the classification scheme was designed to numerically code each of these aspects of the verbal message. The five grammatical codes utilized were: assertion, question, talkover, non-complete, and other. The response modes were: support, non-support, extension, answer, instruction, order, disconfirmation, topic change, initiation-termination, and other.

In the coding procedures, a three-digit code was assigned to each message. The first digit designated the speaker, the second refers to the grammatical form, and the third identifies the response mode of the message relative to the previous message. In this manner, any communicative exchange can be represented by a series of sequentially ordered numerical codes.

The next step was to translate the numerical codes into control directions. These assignments were made on the basis of whether a message was (a) an attempt to assert definitional rights, designated i-up (↑); (b) a request or an acceptance of the others definition of the relationship, designated i-down (↓); or (c) a non-demanding, non-accepting leveling movement, designated as one-across (→). The control directions of message types are given in Figure I.

Figure I: Control Directions of Message Types

	support	non-support	extension	answer	instruction	order	disconfirmation	topic change	initiates-terminates	other
	1	2	3	4	5	6	7	8	9	0
assertion 1	+	+	+	+	+	+	+	+	+	+
question 2	+	+	+	+	+	+	+	+	+	+
talk-over 3	+	+	+	+	+	+	+	+	+	+
non-complete 4	+	+	+	+	+	+	+	+	+	+
other 5	+	+	+	+	+	+	+	+	+	+

This control matrix forms the basis for obtaining verbal transactional information, the third step in the coding procedure by combining the control direction of one message with the control direction of contiguous message, the transactional concepts of symmetry, complementarity and transition are operationalized. The similarities or differences between the paired message control directions are used to define basic types of control patterns. The nine transactional (or relational units) resulting from the combinations of the three control directions are given in Figure II.

Figure II: Control Configurations of the Nine Types of Transactional Units

Control Direction of Speaker A's Message	Control Direction of Speaker B's Message		
	One-up (+)	One-down (+)	One-across (+)
One-up (+)	1. (++) Competitive Symmetry	4. (++) Complementarity	7. (+) Transition
One-down (+)	2. (++) Complementarity	5. (++) Submissive Symmetry	8. (+) Transition
One-across (+)	3. (+) Transition	6. (+) Transition	9. (+) Neutralized Symmetry

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question 2	+	+	+	+	+	+	+	+	+	+
talk-over 3	+	+	+	+	+	+	+	+	+	+
non-complete 4	+	+	+	+	+	+	+	+	+	+
other 5	+	+	+	+	+	+	+	+	+	+

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One-across (+)	3. (++) Transition	6. (++) Transition	9. (++) Neutralized

In a complementary transaction, control directions are different and directionally opposite, the definition of the relationship offered by one interactant is accepted by the other. A symmetrical transaction, where the control directions are the same, involves one interactor behaving toward the other as the other has behaved toward him/her; thus, there is a similarity of definition by the two individuals. In a transitional transaction, where the paired directions are different, but not opposite, one of the interactors offers or responds with a neutralized control definition, and thus, minimizes the issue of control. Or, the proposal of control made by one is not accepted nor rejected, but still open to negotiation.

Based upon the verbal coding scheme, descriptive measures of transactional dominance, and redundancy can be computed (Millar and Rogers, 1981). Individual domineering behavior can be operationally defined by the number of one-up maneuvers an individual makes in an on-going interchange. Two measures of transactional dominance can be computed--pure and comparative dominance. Transactionally pure dominance is the per cent of all one-up statements made by an individual followed by one-down responses from the other. (Pure dominance = given ($\uparrow$) % ($\downarrow$)). A second set of dominance measures resides in the comparisons of the actors acceptance or resistance to one-up assertions. Comparative dominance, then, is measured by difference between the percentage of one-up messages followed by one-down responses minus the percent of one-up symmetrical transactions. (Comparative dominance = % $\uparrow\downarrow$ - % $\uparrow\uparrow$). And a final dominance score, total dominance, is based on the transactional types in which one person's message is in a higher control position than the other. Operationally then, total dominance is the addition of each person's percent of one-up, one-down transactions; one-up one-across transactions; plus one-across one-down transactions (total dominance = $\uparrow\downarrow + \uparrow\rightarrow + \rightarrow\downarrow$).

Redundancy refers to the predictability of a given message sequence. Such predictability can index the organization of the relational ecosystem. Conceptually, redundancy may be the most central construct by which relationships are described and "in the pragmatic sense known" (Rausch, Grief and Nugent, 1979:471). The concept of redundancy appears as primary in the clinical literature where overly redundant or rigid interaction patterns are related to various individual and family pathologies.

In operational terms redundancy is the sum of the absolute deviation from random use of the nine possible transactional configurations. Formally expressed, transactional redundancy is defined as:

$$TR = 100 \left[\sum_{i=1}^9 |O(P_i) - R(P_i)| \right]$$

In actual calculation, $R(P_i)$ is a constant corresponding to the total probability of occurrence divided by the total number of possible transacts -- $1.00/9 = .11$. The lower the score for TR the more flexible (less redundant) the relational message exchange.

One criticism of the methodology and resulting relational conceptualizations of Rogers and Millar emerges from the absence of the nonverbal dimension in the message coding. Most relational theories argue that the nonverbal dimension carries the bulk of the relational message (Watzlawick, et al 1967; Birdwhistell, 1970; Mehrabian, 1971) recommending that a methodology and a conceptualization of close relationship interaction which neglects the nonverbal dimension neglects the predominant code describing the creation and maintenance of the relationship. To overcome the criticism, a nonverbal coding scheme was developed compatible with the verbal coding so that the conceptual measures of the transaction could be utilized. A more accurate picture of the close relationship transaction was the goal of the nonverbal addition.

NONVERBAL CODE

Five difficulties emerged when constructing a coding scheme for nonverbal behavior. First, nonverbal behavior, unlike verbal utterances which may have specific beginnings and endings, is continuous and ongoing. Nonverbal behavior relevant to any interchange may begin before any sentence may be uttered continuously well after the "good-byes". (Harrison, 1969) However, assuming codes are discrete sets of symbols, no matter what coding scheme might be concocted, potential nonverbal information will be lost.

Second, previous research argues that some pattern sequences of nonverbal behavior last longer than units of speech (Dittman, 1971). Any code which fails to recognize these longer patterns misses much of the richness of the behavior. However, to recognize the longer sequences may lead to non-compatible codes. Third, similar nonverbal behaviors may serve different social functions. (Rosenfeld, 1978). What function any single behavior, or cluster of behaviors, might serve at a precise moment (a) might not be knowable to the observer, (b) may depend upon the perception of the interactants, consequently differing from those of the observer, (c) may serve several functions simultaneously, a condition not lending itself to reliability of coding. For example, touching a loved one may signify "affection," "status," "interaction regulation," or "involvement with the other" as well as some social function as yet unknown.

Fourth, the determination of which behaviors to be coded from the interaction presents a difficulty also--every identifiable action? clusters/chunks of behaviors? The former distorts the social weight of the behaviors because the participant may not perceive many (most?) of the actions of the other within an interaction environment. The

researcher, on the other hand, can code virtually any action a camera can capture. However, coding clusters as single chunks leads to loss of information. For the nonverbal researcher, regardless of the decision of what to code potentially useful information is lost.

Fifth, assuming the researcher selects to code clusters, a problem of determining what is a chunk (the unit of analysis) becomes paramount. What begins and/or ends the cluster? time (Harrison, 1969)? speaking turn (Duncan, 1977)? All behavior emitted while a speaker speaks? All listener behavior? No matter what a priori choices may be made, errors of too-much, or of-the-wrong-kind may remain.

In attempting to address the problems of coding nonverbal behavior, choices were made before viewing the interchange. The first choice admitted that information would be lost no matter what type of code was devised. Therefore, it was decided that the most prominent behavior emitted during an utterance would become the unit of analysis. The prominent behavior was selected on the assumption that if obvious to the observer, it was likely to have been observed by the interactants.

The second choice was that the verbal and nonverbal message systems would be viewed as co-active such that one impacted upon the other (Israel, 1978). While sequences of physical and spatial behavior might extend beyond a single utterance, the immediate mutual impact of each code upon the other recommends tying them together. Therefore, the coded oral message provided the framework from which the predominant nonverbal behavior was selected. A resulting weakness is that the longer an utterance lasts, the more behavior is lost in the coding. But the decision to use the oral message encouraged the compatibility of the two coding schemes, since the base unit was the same. Such would not have been the case had the "speaking turn" served as the base, as recommended by Duncan (1975) and Millar (1980). However, verbal information would have been lost with some nonverbal lost as well.

The third choice assumed that even if action served multi-social functions simultaneously, the action serving the control function was not denied. Whether simultaneous functioning is perceptually possible remains an unanswered question. Of course, the issue of validity rises with the decision to code certain behaviors as being part of the control of the relationship while neglecting others.

The fourth choice decided that the predominant action of the speaker and the listener would be coded. Following the recommendation of Woodall (1980), this procedure adds information to most schemes, permitting inferences about the simultaneous impact of each interactant upon the other. By including the listener, more components of the relational system are included in the resulting description.

The fifth choice was to remove the present researcher from making a priori determinations of intent. Only those behaviors which previous researchers had associated with "control," "status" and "power" (Eakins and Eakins, 1978) were coded. Physical-facial behaviors and positional movements were coded. While the latter is a more gross movement,

"distance between" has consistently been associated with control (Triandix, 1972; Mehrabian, 1971).

Figure III
Behavior Associated with Relational Control

<u>CUES</u>	<u>SUPERIOR</u>	<u>SUBORDINATE</u>
Eyes	Look or stare aggressively Look elsewhere while speaking	Lower eyes, avert eyes, look away, blink Watch speaker while listening
Face	No smile or frown Impassive, not showing emotions	Smile Expressive facial gestures, showing emotions
Posture, Bearing	Relaxed, body lean Loose legs, freed arms, non-circumspect positions	Tense, more erect Tight, legs together, arms close to body
Gestures	Larger, more sweeping, forceful	Smaller, more inhibited
Touch	Touches other	Does not touch other, does not reciprocate touch
Use of Space	Expands, uses more space	Condenses, contracts, uses little space
Distance	Maintains larger envelope of space Closer Approaches other, crowds Cuts across other Walks into other's path	Maintains smaller envelope More distant Retreats, yields Gives way Moves out of other's way
Clothing	Loose, comfortable	Constraining, form-fitting

Such a choice is subject to the "law of the hammer" (Hewes, 1978), which argues that the methodology is inflicted upon the behavior rather than emerging from consideration and observation of behavior. The consistency of previous findings by researchers of relational status and power may minimize the impact of the criticism.

Methodology

A three-digit code was created, following the model described in Rogers and Farace (1975). The first digit designates the speaker, the second the predominant physical-facial behavior found in the utterance and the third the more gross positional movements toward or away from the other participant. Using this scheme, the nonverbal cues of space, gesture and voice would be used since paralinguistic cues used in verbal code.

First digit

- 1 Speaker A
- 2 Speaker B

Second digit

- 1 eyes stare, looks away while speaking
- 2 face impassive
- 3 body relaxed
- 4 gestures expansive
- 5 touches other
- 6 averts eyes, looks when listening
- 7 body tense; erect; holds pose
- 8 inhibited movement
- 9 self-touch; touches objects
- 0 facial activity other

Third digit

- 1 leans toward
- 2 leans away
- 0 holds position

The second digit includes 5 behaviors associated with control "claims" and 5 associated with control "submission." The third digit includes movements-toward which are associated with control and movements-away which are associated with submission. "Holding position" was assumed to be a non-control/non-submission move. The rationale for this decision rests in research literature on synchronous movement and equity theory (Argyle, 1970). The argument rests on the assumption of "comfortable distance" between interactants on physical and/or psychological criteria. If either interactant gets "too close," the "distance between" will be adjusted. For this code, then, the assumption was made that "holds position" recommended the conclusion that the interactants had reached the "comfortable distance" between them.

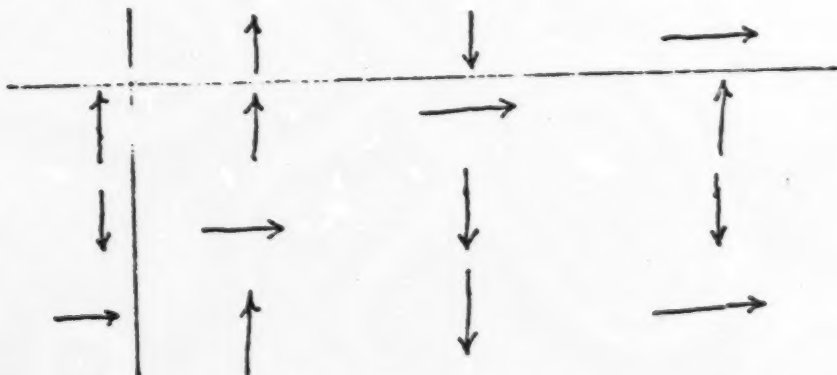
The next step was to transform the digital code into control codes. Those physical-facial codes associated with control claims (1-5) were designated as one-up moves (↑). Those physical-facial codes associated with submission claims (6-9) were designated as one-down moves (↓).

The "Other" category, including facial activity, was designated as non-demanding, a leveling movement. The positional moves toward the other interactant also were designated one-up (), while moves-away received designations of one-down (). Holding position was designated as one-across (). Figure IV reports the 30 message types and the combination of directional designators.

Figure IV: Message Type and Directional Designators

	Stares; looks away when speaking	Face Impassive	Body Relaxed	Gestures expansive	Touches other	Averts eyes; look when listening	Body tense	Inhibited movement	Self-touch; touch objects	Other; facial activity
Toward	↑↑	↑↑	↑↑	↑↑	↑↑	↓↑	↓↑	↓↑	↓↑	→↑
Away	↑↓	↑↓	↑↓	↑↓	↑↓	↓↓	↓↓	↓↓	↓↓	→↓
Hold	↑→	↑→	↑→	↑→	↑→	↓→	↓→	↓→	↓→	→→

Figure V: Nonverbal Message Codes into Single Value Code



In order to match the nonverbal with the verbal code while maintaining a relative simple system of directional codes, the double-arrow directional codes of the 30 message types then was reduced to single-arrow directions. The results of this reduction are reported in Figure V. on the preceding page.

The reduction exposed a conceptual and theoretic problem. The scheme itself permits "mixed messages," those containing behaviors associated with control and submission. Under those conditions ($\uparrow\downarrow, \downarrow\uparrow$), the conceptual decision was to code the mix as a one-across, non-demanding or leveling in the interaction. If the perceiver did in fact see the message as "mixed," then the perceiver would, presumably, be unsure of the interpretation. To translate "uncertain" as transitory seems an appropriate conceptual conclusion.

The scheme also reveals other "mixed" messages. The direction of interpretation for the mix seems more obvious, however, when one nonverbal behavior is coded as one-across while the other is directionally coded ($\uparrow\rightarrow, \downarrow\rightarrow, \rightarrow\uparrow$). When the positional code is transitory, meaning the gross body changes are not present (the body is on hold), preference was given to those actions which were obvious -- the physical-facial. So ($\uparrow\rightarrow, \downarrow\rightarrow$) was coded in favor of the direction of the action. When the physical-facial codes were transitory in direction and the body was moving toward or away from the other ($\rightarrow\uparrow$) preference was given for the direction of the body movement. The justification for decision rests in perception research. Specifically, the novelty-complexity rationale for perceiving certain events while ignoring others. Mehrabian (1976) uses these notions as the base for his views on environmental information load.

The matrix collapses into 11 $\uparrow$ combinations (.3667), 9 $\downarrow$ (.3000) and 10 $\rightarrow$ (.3333).

Once the two nonverbal codes had been transformed into directional messages, the next step was to combine the verbal and the nonverbal codes into a total message. The combination of directions follows the same logic as described when combining the two nonverbal codes.

Figure VI: Directional Values of Combined Verbal and Nonverbal Messages

Nonverbal		One-Up	One-Down	One-Across
Verbal	One-Up	$\uparrow\uparrow (\uparrow)$	$\uparrow\downarrow (\rightarrow)$	$\uparrow\rightarrow (\uparrow)$
	One-Down	$\downarrow\uparrow (\rightarrow)$	$\downarrow\downarrow (\downarrow)$	$\downarrow\rightarrow (\downarrow)$
	One-Across	$\rightarrow\uparrow (\uparrow)$	$\rightarrow\downarrow (\downarrow)$	$\rightarrow\rightarrow (\rightarrow)$

Notice that this leads to combinations in which the verbal takes directional precedence over the nonverbal. First, when the nonverbal behavior is coded as one-across, or leveling, the total message directional value is determined by the verbal direction. Second, when the two codes move in opposite directions, the resulting mixed message is assumed to be transitory. Such a decision gives the codes equal weight. Nonverbal literature (Mehrabian, 1971; Birdwhistell, 1970) argues that when messages are mixed, the nonverbal is more likely to be believed. These same researchers and others argue that verbal and nonverbal behaviors are two bands of a total message and can be considered only together. Reconciliation of research and theory with experience suggests that on some occasions, independent of content, verbal behaviors are more dominant in the interpretation of the total message. Obviously, the assumption needs to be tested. However, since paralinguistic cues are implicit in the verbal code nonverbal behavior is not completely neglected.

The coding permits the simultaneous behavior of speaker and listener to be coded. The listener's demeanor while listening can impact upon the behavior of the speaker. For example, a person continuing to gesticulate while another speaks would be perceived as "rude" in our culture. Rudeness, breaking cultural norms, maybe interpreted as a "control claim."

The result of the nonverbal coding is the ability to combine the verbal and nonverbal 1 codes into a single message type. In turn, the conceptualizations of dominance, submission, redundancy are not lost to the researcher. However, the addition of the nonverbal code may lead to a different, more accurate, picture of actions and transactions of a relational system. How message codes describe a relational system may be illustrated by a case study of a couple in a close relationship.

DESCRIPTION OF INTERACTION: BARBARA AND JOE

A videotape of a conversation between a couple was coded. They had been living together for nearly four years and planned to be married some 10 days from the time of the recorded conversation. Joe had been married before but divorced. Barbara had not been previously married. There were no children. Their conversation dealt with their relationship as a couple to their respective families. A transcript of the conversation appears in Appendix A. The complete coding of the conversation is reported in Appendix B.

During the 15:31 minutes of interchange, there were 124 verbal utterances coded -- 64 with Barbara as speaker, 60 with Joe as speaker.

Monadic Description

The verbal and nonverbal coding of the exchange between Barbara and Joe provides the researcher and clinician with a visualization of the part each plays in the relational ecosystem. Figure VII displays a summation of the nonverbal behavior of each during the conversation.

Figure VII

Nonverbal Message Use by Person A as Speaker and Listener

Position		1	2	0	
Message Type	1	2 (.016)	2 (.016)	4 (.032)	8 (.065)
	2	0	0	0	0
	3	0	0	0	0
	4	13 (.105)	7 (.056)	16 (.129)	36 (.290)
	5	1 (.008)	0	1 (.008)	2 (.016)
	6	0	0	10 (.080)	10 (.080)
	7	0	1 (.008)	1 (.008)	2 (.016)
	8	0	2 (.016)	1 (.008)	3 (.024)
	9	1 (.008)	4 (.032)	20 (.161)	25 (.202)
	0	0	1 (.008)	37 (.298)	38 (.306)
		17 (.137)	17 (.137)	90 (.726)	124

Figure VIII

Nonverbal Message Use by Person B as Speaker and Listener

Position		1	2	0	
Message Type	1	1 (.008)	0	6 (.048)	7 (.056)
	2	0	0	0	0
	3	0	0	0	0
	4	4 (.032)	7 (.056)	22 (.177)	33 (.266)
	5	0	0	0	0
	6	0	1 (.008)	4 (.032)	5 (.040)
	7	0	0	2 (.016)	2 (.016)
	8	4 (.032)	2 (.016)	7 (.056)	13 (.105)
	9	1 (.008)	4 (.032)	12 (.097)	17 (.137)
	0	0	8 (.065)	39 (.315)	47 (.379)
		10 (.081)	22 (.177)	92 (.742)	124

Notice that the most frequent behavior while speaking and/or listening was coded "Other; facial activity." with the body stationary. For Barbara the next most frequent behavior was "self-touch" or "touch objects" while keeping the body stationary. The couple converses while seated at right angles to each other at a small, square kitchen table. Throughout the exchange, both as speaker and as listener, Barbara rubs her hand around on the surface of the table. For Joe, the second most frequent behavior was "expansive gesture" while holding the body stationary. For both persons, some nonverbal messages were not used (not coded). Neither speaker was coded as using "impassive face" nor "relaxed body." This phenomenon was not surprising. Recall the predominant nonverbal behavior during an utterance was selected for coding. While both behaviors have previously been associated with control claims, both are relatively passive behaviors -- particularly compared with the other nonverbal messages available. While one speaker might display an "impassive face" if the body was gesturing the gesture would take precedence in the coding.

Figure IX displays a summary of the coded verbal messages for both Barbara and Joe. The most frequent verbal behavior by Barbara

Figure IX: Verbal Messages

ONE-DOWN (↓)					
Code	Label	Intensity	Frequency		Dyad
			Barbara	Joe	
11	Assertion-as-support	4	8	6	14
21	Question-as-support	2	-	2	2
23	Question-as-extension	6	4	-	4
30	Talkover-as-other	10	-	5	5
31	Talkover-as-support	5	-	8	8
ONE-ACROSS (→)					
13	Assertion-as-extension	12	24	16	40
40	Noncomplete-as-other	2	4	1	5
43	Noncomplete-as-extension	3	-	1	1
ONE-UP (↑)					
12	Assertion-as-nonsupport	28	6	4	10
14	Assertion-as-answer	20	1	3	4
15	Assertion-as-instruction	24	5	1	6
18	Assertion-as-topic change	32	-	2	2
19	Assertion-as-initiation/ termination	16	2	1	3
22	Question-as-nonsupport	14	3	-	3
32	Talkover-as-nonsupport	35	3	3	6
33	Talkover-as-extension	15	4	7	11

and Joe was assertion-as-extension accounting for 37% of Barbara's comments and 26% of Joe's. The second most frequent verbal message from Barbara was assertion-as-support accounting for 12.5% of her comments. For Joe, the second most frequent utterance was talkover-as-extension, 11.6% of his comments. Converting the coded utterances into control directions reveals Barbara displays one-down 18.75%, one-across 43.38%, and one-up 37.5% of her total comments. In contrast, Joe uses one-down strategies as 35% of his total comments, while one-across account for 30% of his remarks, and one-up 35%.

Transaction Description

However, the transactions between conversants rather than the actions of the separate individuals provides the researcher and clinician with relational information. A transaction is defined operationally as contiguous utterances. The exchange between Barbara and Joe produces ninety-nine transacts. Because several speaker-turns contain more than one coded utterance the total number of transactions is fewer than the total number of utterances. Figure X reports transactions involving Barbara and Joe. The verbal-only description is included for the sake of comparison, to demonstrate the impact the addition of the nonverbal codes has upon the description and subsequent conceptualization of the relationship.

Figure X

<u>Verbal Only</u>									
JOE (respond)				BARBARA (respond)					
↑	↓	→		↑	↓	→			
BARBARA (speaker) ↑ (8) .40	↓ (3) .43	→ (6) .27	20	JOE (speaker) ↑ (5) .24	↓ (3) .20	→ (7) .50	21		
			7				15		
			22				14		
			49				25		
17	19	13		15	10	25			
<u>Total</u>									
JOE (respond)				BARBARA (respond)					
↑	↓	→		↑	↓	→			
BARBARA (speaker) ↑ (16) .53	↓ (7) .70	→ (4) .44	30	JOE (speaker) ↑ (14) .50	↓ (9) .81	→ (6) .55	28		
			10				11		
			9				11		
			49				50		
27	13	9		29	11	10			

Based upon the total message descriptions the transactional qualities of dominance, submission, and redundancy can be determined.

Pure dominance for Barbara and Joe describes the percentage of one-down responses made by the other to initial one-up claims. Using only the verbal messages reported above, Barbara's score for Pure Dominance is .35, Joe's .24. Adding the nonverbal messages alters the verbal-only description so the scores become, Barbara .27, Joe .25. Approximately one-fourth of all transacts in which the one partner asserts definitional rights the other responds by accepting the control claim. The change appears due to the addition of two factors: (a) the reduction in the number of transitory transacts caused by integrating the nonverbal codes with the verbal, and (b) the more "control claim" movements of Joe when he speaks even if the utterance is interpreted as one-down or one-across. "Expansive gesture," "Moves toward" often accompany Joe's speech. By dividing Joe's dominance score by Barbara's, a dominance ratio descriptive of the relationship can be displayed, $.24/.27 = .93$. A score of 1.00 would suggest equality. Since the ratio is less than 1.00 Barbara can be considered somewhat more dominant than Joe. Had the verbal alone been reported the dominance ratio would have been $.24/.35 = .69$ showing Barbara to be more frequently dominant.

Comparative Dominance is the percentage of one-up messages followed by one-down messages (one-up complementary) from the other minus the percentage of one-up messages followed by one-up messages (competitive symmetrical). The resulting score is an indicant of the compliance or resistance with/to the relational claims of the other. Barbara's comparative dominance to Joe is $.27 - .53 = -.26$; Joe's comparative dominance to Barbara is $.25 - .50 = -.25$. Both partners are less likely to comply with the definitional claim offered by the other and are more likely to offer a competing definition of the relationship. However, the ratio of Comparative Dominance, an indicant of the relationship, is nearly equal ($-.25/-.26 = .96$), although Barbara again appears to be slightly more dominant.

The Total Dominance can be conceptualized as the number of instances in which one person's definition of the relationship was accepted or not-disputed by the other, ($\uparrow\downarrow + \uparrow\rightarrow + \rightarrow\downarrow$). Barbara's score computes, $8 + 6 + 4 = 18$; Joe's score $7 + 7 + 2 = 16$. Of the 49 transactions initiated by Barbara her definitional rights were accepted or non-disputed by Joe 37%; Barbara accepted or non-disputed Joe 32%. The ratio of the Total Dominance scores provides another indication of the compliance or resistance to relational definition of the system, $.32/.37 = .86$. Barbara again appears to be the more dominant partner when defining the relationship. Consistent with the other two measures of relational dominance, however, is a picture of near equality.

Pure submission also may be viewed as a description of transactional equality. Submission is operationalized as the percentage of one-up messages following an initial one-down. For Barbara the Pure Submission score is .70, for Joe .81. For each, if the message

strategy is to give to the other definitional rights, the partner is likely to do so. If only the verbal messages were included in the analysis, however, the picture would change: Barbara .43, Joe .20. The score alteration results from the decrease in the number of transitory messages recorded using the two codes in combination. The resulting ratio $.81/70 = 1.15$ supports the transactional description of Barbara as the more likely of the partners to define the relationship.

The patterns of message sending-receiving which emerge as a relationship continues over time becomes an indicant of the type of relationship created between partners. Redundancy describes the predictability of a given transactional sequence and can be computed by subtracting the expected frequency of any transaction from the observed frequency. In Figure XI summaries of the transactions appear with the upper summary the "verbal only" used to compare the contribution the nonverbal behavior makes to the conceptualization of the relationship. From the work of Courtright, Rogers and Millar (1980),

Figure XI: Transaction Summary

	(↑↑)	(↓↓)	(↔↔)	(↑↓)	(↓↑)	(↑→)	(→↑)	(↓→)	(→↓)
Frequency	13	1	7	12	6	16	13	15	16
Percentage	.13	.01	.07	.12	.06	.16	.13	.15	.16
Deviation	2	10	4	1	5	5	2	4	5

Transactional Redundancy = 38

Total Transacts = 99
 % Symmetrical = .21
 % Complementary = .18
 % Transitory = .60

	Total Message								
	(↑↑)	(↓↓)	(↔↔)	(↑↓)	(↓↑)	(↑→)	(→↑)	(↓→)	(→↓)
Frequency	30	3	4	15	17	13	8	2	7
Percentage	.30	.03	.04	.16	.17	.13	.08	.02	.07
Deviation	19	8	7	4	6	2	3	9	4

Transactional Redundancy = 62

Total Transacts = 99
 % Symmetrical = .37
 % Complementary = .33
 % Transitory = .30

the lower the score the more flexible the relationship. With the upper range of redundancy for this couple equal to the number of transacts minus one (all transacts in one category), the redundancy score describes a moderately flexible couple tending toward rigidity of transaction.

System Visualization

To enhance the description of transactional patterns with the goal of improving descriptors of relationships Roger, Courtright and Millar (1980) operationalized the concept of message intensity. They assume an implicit distancing in the coding logic itself. An intensity index then was based upon the number of ways grammatical codes and response modes could be ranked separately from least to most intense. The numerical weight for each was obtained by multiplying the two intensity weights together. Figure XII displays the message types and the intensity weight for each verbal message.

Figure XII: Verbal Weights

		Discon- firmation	Order	Topic Change	Non- support	Instruc- tion	Answer	Initiates Termin- ates	Extension	Other	Support
talk-over	5	50	45	40	35	30	25	20	15	10	5
assertion	4	40	36	32	28	24	20	16	12	8	4
other	3	30	27	24	21	18	15	12	9	6	3
question	2	20	18	16	14	12	10	8	6	4	2
non-complete	1	10	9	8	7	6	5	4	3	2	1

Following similar logic an intensity weight was determined for the nonverbal messages. The 30 message types were ranked according to the ability of each to increase the "distance" between the interactants. Distance refers to a relational distance rather than a physical one. So, a "move closer" while reducing physical distance may increase the relational distance between participants since increased proximity may be an invasion, a "claiming of relational rights." The weights for the verbal and nonverbal message types are strictly arbitrary intended to illustrate the concept of message impact. While the notion of message continuum appears to "make sense" the specific assumption that such a continuum exists and the message weights which result needs to be tested. However, the message intensity measure increases message variability permitting a graphic display of a message exchange.

Figure XIII: Nonverbal Weights

	Touches Other	Eyes Stare	Gesture Expansive	Face Impassive	Body Relaxed	Avert Eyes	Inhibited Movement	Body Tense	Self-Touch	Other
Toward	30	27	24	21	18	15	12	9	6	3
Away	20	18	16	14	12	10	8	6	4	2
Hold	10	9	8	7	6	5	4	3	2	1

Appendix C displays the couple's conversation using intensity weights. To integrate the verbal and nonverbal control messages the weights of the codes were combined. The act of combination here is symbolic and graphic. While message and relational theory argues the verbal and nonverbal codes function together to create a "total message," a means to operationalize the code combination has not been determined. In Appendix C, the weights have been added to illustrate that the codes work together and to illustrate how the combination of the codes can intensify the relational distancing between partners.

The weights of the total message reported in Appendix C also include the nonverbal behavior of the non-speaker emitted while listening. The coding of the nonverbal behaviors permits a description of the listener. Usually the listener's non-oral "backchanneling" is lost in the coding of conversations. However, listener responses and speaker strategies may be modified by the manner in which they listen and are listened to. If a relationship is a system, then the non-speaking component of the system ought to be accounted for in conceptualizing, indexing and analyzing relationships. In American culture, behaving while another is speaking is considered inappropriate -- rude (Duncan, 1977). Perhaps rudeness may be an indicant of relational control claim by the violation of a behavioral norm. The most frequent listener mode was transitory for both speakers -- Barbara, 51.7% and Joe, 51.6%. Perhaps the maintenance of cultural appropriateness despite the relative symmetry of their conversation tempers the one-upness.

When combining the speaker verbal-nonverbal values with the listener behavior values to add the listener behavior values the decision was to add the listener to the total value. While the concept of system recommends the inclusion of the listener, no theory or research yet provides an index for combining the values. Perhaps the state of the listener multiplies or subtracts from the total message intensity of the moment. Perhaps the impact of listener inclusion varies according to the cultural appropriateness and intensity of the listener action. For purposes of graphically displaying the relational system and without justification for any other form of combination, the listener intensity measure was added to the combined intensity weight of the verbal and nonverbal codes. The addition did not change the basic wave configuration of the conversation. The movement of the conversation continued to follow the pattern created by combining the verbal and nonverbal codes. Six messages were intensified by the addition of the nonverbal behavior of the listener: 9, 26, 29, 34, 41, 73. In all but 26, the listener moved closer to or away from the speaker while listening reveals a wave of motion for the definitional control of the relationship. Systems move along irregular paths toward goals with the paths cybernetically altered. The greater the deviation from the goal path the more likely the system to adjust itself. Failure to make corrections may result in entropy, system disintegration. If the control dimension of systems (relationships) describes the relational rights for keeping the system together, the fluctuations in one direction ought to generate counter-control moves in another. The graphic display of intensities illustrates control fluctuation. With the exception of the interchange message acts 34-36, the most extreme peaks are followed by large, rapid decreases in message intensity.

This conceptualization of system movement lends itself to utilizing mean and standard deviation to describe control fluctuations. Mean system control intensity may be operationalized as the sum of the intensities of all control messages divided by the number of messages sent; $\bar{x} = 26.4$. The standard deviation for this system is 13.78. The mean $\pm$ standard deviation (40.1--12.6) describes a range of control messages. Because the intensity score has a lower limit of 3 (1 for each code plus 1 for the listener) and an upper limit of 110 (50 for the verbal code + 30 for the nonverbal + 30 for the listener), the intensity mean, standard deviation and resulting range can be descriptive of the flexibility of relationship. The narrower the range, the more inflexible the relational pattern; the wider the range the more flexibility in the pattern of relational control. Because the more intense weights by definition are associated with control claims, the nearer the upper limit of intensity mean system control the more competitive, symmetrical the relational pattern; the lower the mean system control the more neutralized symmetrical the relational pattern. The nearer the upper limit, the mean control becomes a relational issue because each person attempts to define it. The nearer the lower limit the mean, control becomes a relational issue because neither seeks to define it.

The number of messages which extend beyond the range exert pressure upon the relational system to "right itself" through counter action. For Barbara, 24 of 64 messages had intensities beyond the range (16 above 40, 8 below 12). The resulting proportion may be considered an indicant of relational entropy. For failure of the system to counteract the force would lead to relational disintegration through competition or neglect. Barbara's contribution to relational entropy is .375; Joe's score 21 of 60 messages = .350. The ratio of entropy, defined by dividing Joe's score by Barbara's identifies which partner exerts greater entropic pressures upon the relationship. In this case, the system ratio = .933 identifies Barbara as the greater source of entropic pressure upon the system.

Notice, however, that an entropic force does not in itself generate relationship dissolution. Rather, the entropic force becomes an indicant of pressure to change the control nature of the relationship. For an inflexible patterned relationship with a narrow range of control messages, flexibility may be stimulated by exerting entropic force -- sending messages beyond the range. The risk of such a phenomenon is relational dissolution, a risk to be run if the relationship is to be altered. Inherent in relational flexibility and health then is an entropic force to inflexibility and relational pathology.

CONCLUSION

This paper has argued that systems theory can be applied to the description and analysis of families and other close relationships. Relational rules and patterns were described as indicants of the quality of the relationship. A methodology for integrating verbal and nonverbal control codes was presented for identifying and indexing relational patterns. Finally, the patterns indexed by integrating the control codes for speaker and listener were related to system maintenance and entropy by using a case study. The goal was to describe systems theory and method as a tool for understanding the family as an ecosystem, a prerequisite to counseling and therapy.

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APPENDIX A

APPENDIX A

	Verbal Message	Code	Direction	Duration
J:	Barbara, I was talking to John the other night and explained to him some of the reservations I have about getting married. You know, after talking to him, there is no way I want to get married right now.	219	↑	7
				Pause=3
B:	What are your reservations about getting married, and, and, why did you wait until a week-and-a-half before the wedding to express them?	123/ 122	↓ ↑	6
J:	Hey look, I'm just not ready. I haven't been divorced long enough.	214	↑	4
B:	Joe...We've been living together for four years. Uh...You've been separated for 4½ years. What difference does it make that the divorce has only been final for a year? Uh...You know... That doesn't...It isn't that we don't know each other well enough.	112	↑	16
J:	That's true. But you know another thing is I was, I was with my mother a couple of weeks ago. We had lunch together and, you know, she brought up some important points. She...number one, Barbara is not going to change her last name. Neither one of you are interested in having kids, and you are not even going to exchange rings. Why even bother to get married?	211/ 213	↓ →	18
B:	Your mother? What does your mother have to do with this? You let your, your mother influence you in a decision like this? (pause)...(sigh) Joe, you're 34 years old. You have a mind of your own. I wouldn't let my family influence me, uh, in making a decision as to whether I'd get married or not if I had a commitment to you.	122/ 112	↑ ↑	24
J:	Hey look, I know that. But you know,...I value their opinion too. And, you know, besides that, I have to deal with them. It isn't like I can just...completely divorce them from our life either.	213/ 212	→ ↑	8
B:	You know, I guess...I guess I had no idea that your mother felt this negatively about me.	113	→	8
J:	Yea, you see, but part of the problem is that one of the reasons she feels that way is that you came over to the house you'd never take the	213	→	18

Verbal Message	Code	Direction	Duration
time to sit down and get involved with small talk with her. You would talk with my father about business and my brother about business and she felt left out. So she'd feel alienated to you. That's why she feels that way.			Pause=3
B: (Sigh)...Whose more important to you? Me or your family, er your mother?	122	↑	6
J: Look Barbara, I still love you, but I just don't know if I want to spend the rest of my life with you. (pause)...I mean, it was your idea to get married in the first place.	213/ 212	→ ↑	12
			Pause=3
B: Joe, the reason,...the reason that we got engaged,...in October...you know, seven months ago, was because we found, that it put the relationship on a different plane. You know, we'd look at it a little bit differently. And, and we decided that if either one of us had reservations then we'd sit down and we'd talk about them. However, I didn't think you'd wait until a week-and-a-half before the wedding. Everythings been planned. All, you know, our friends know...uh, you know, it just, it just, doesn't, it just doesn't seem, it just doesn't seem fair.	113/ 112	→ ↑	34
			Pause=2
J: You know, I guess I just don't understand. Why is it so important to get married right now? I mean what's, what's that going to do to the relationship? The relationship's great right now.	213/ 221	→ ↓	5
B: I guess because I feel that you can only go so far in a relationship. And you have, you have to keep moving or it becomes stagnant. And,... I guess right now I just feel that, you know, we've got to move past where we are right now. Past just a living together relationship if we want to grow in the relationship. Uh...I guess I feel that this is, is just, you know, a death sentence as far as I'm concerned.	114	↑	29
			Pause=3
J: Geeze, you know, maybe, maybe you're right. You know, may, maybe, you know, maybe you're right. Maybe we ought to get married. Oops, there's, there's the phone Barbara.	211/ 215	↓ ↑	7
B: I'll get it. --conversation interrupted---	111/	↓	1
B: I don't understand what you are saying when... you say...	119	↑	3

Verbal Message

	<u>Code</u>	<u>Direction</u>	<u>Duration</u>
J: We'll...I really think your brother-in-law,... I...I guess I'm taking it very personal what happened about a month ago. You know, and I... I just, uh, been laid off from my job. And uh, we were over, over at their house, and we were up there, and we were just coming back from tennis, and uh...because of the fact that, num- ber one I was going to be out of a company car and everything. All of a sudden, you know, he, uh, he comes up and sorta comes right down on both of us. And he says, Joe, you can't stay here anymore and create...a tremendous lot of problems. The thing that really got me was it seemed that the guy waited until for, a moment where I was weakest, at a low point. You know, I'd just been laid off the job and everything. And, I was going to be out of a company car. In fact, we'd even talked about the fact that I was going to give your sister, Kelley, some money so that I would come over a couple of times during the week and eat at their place. And, all of a sudden, the guy comes down on top of us, and he literally says, "You're not wel- come here anymore." And the guy just hit me at a bad time. I took it personal.	230/ 213	↓ →	60
			Pause=2
B: Yea, I, naturally you're going to take it...it was a personal attack. The thing is,...and, you know, I'm kinda glad that it happened. In the sense that...now you have a feeling for how I felt...when, you know, a couple of years ago, you know, you said all of a sudden, well...my mother doesn't like you because of this, this and this...You know, you kinda have a, a feel- ing for how I felt. But I don't understand... I mean, you know what type of a person David is. He...	111/ 113	↓ →	31
J: [I know, but I even went out of the way to, you know, to talk with the guy when I was there. You know I knew he didn't have a tremendous amount of interests. But I'd ask him about school or talk to him about...umm...things about umm...astronomy or...or had an interest in. I mean, you know, I really went out of my way. To try...to, you know, to be sort of friendly toward the guy, and then the guy comes back and just sort of stabs me. I didn't like it at all.]	233	↑	21
B: I didn't like it when I felt that that was what your mother did to me...	112	↑	4

	<u>Verbal Message</u>	<u>Code</u>	<u>Direction</u>	<u>Duration</u>
J:	[Yea, but you didn't try to endear yourself to her. You really didn't.]	232	↑	4
B:	Well, that's the difference in our personalities. Maybe it's easier for you to come out of yourself and, you know, like, sit down and talk with a jerk like (bleep) I did make an effort with your mother. You know, I felt that I went in...you know, you've got to realize that your mother and I don't have anything, anything to talk about. It's the type of thing where, you know, I don't...I'm not sitting at home taking care of the house all the time. What am I going to talk to her about? It's a big difference there. You know, I think it's a lot easier for you to talk (bleep)...and I don't think it's fair to say that I didn't really make any, any type of an effort to, uh...to talk with your mother.	113/ 112	→ ↑	39
J:	(You know you didn't). Well, you know, what	232	↑	1
B:	the point is, we're really getting off the tract. I think the point is that we have come to a point in our relationship, Joe, where, you know, we can't depend on our families. You know, it's just you and me.	115	↑	13
J:	Sure.	211	↓	1
B:	You know, I think, that, that we have to make up our mind and that, because of a lot of the things that have happened in the past to us, that we're strong enough...to say. Yea, okay, we have a commitment to each. Uhh, we can get married. You know if you, if you get a job in Atlanta or you get a job in Washington, and uh, you know, I can arrange it with school...then...then we're going to move away. You know, uh, you know the families, I guess, I guess...you have to, you come to a point where you have to make a choice.	115	↑	29
J:	[Well, it's obviously made it easier because, you know, now the feeling is...Boy, the problems you're having with my family, I'm now experiencing with your family to a certain point. But there's a certain amount of rejection.]	233	↑	12
B:	Right.	111	↓	1
J:	Even though it isn't necessarily...now it's interesting, because, in your case, there was	213	→	36

Verbal MessageCode Direction Duration

more of a rejection from mother. In my case, it's more of a rejection (bleeped)...also the head of the household and so he kinda, you know, rules the roost, so to speak. So, you know, but the game is, the rejection is still there. You know, there's, there's, you know, there's a fine difference, but it's still there. So you know, it's like this...there wasn't the right time to be making a move both job-wise and physically from this area to go to another area. You know, it's like, it's being set up, like this is, like somebody is telling us, this is the time

Pause=3

B: Right.	111	↓	1
J: to do it. So, you know, that's why, you know we've talked about, talked about, you know, where, where we'd like to live and that sort of thing. That's why, that's why...for the first time in my life I really haven't felt uh...intimidated by the idea of moving to Atlanta or moving to a Washington or somethin' like that...'Cause, you know, it's like, it's... somebody is trying to tell me something, it's time to, a move, so uh...that's the way it should be.	213	→	23
B: I think that shows, uh, you know, a personal growth on your part and, and a personal, and and a, a growth in our relationship.	113	→	8
J: Yea, we're stronger enough where we can pull it off. Where, I think, I think that two or three years ago we'd been scared to death to a, to even consider it. So...	211/ 213	↓ →	8
B: You would have been scared to death.	112	↑	2
J: Noo, you would have been scared too.	212	↑	2
B: [No. I wouldn't have been scared to...]	132	↑	2
J: [You sure would have.]	232	↑	2
B: Ahh...anyway. I, you know, I'm really kind of glad that that happened. Because I think, it, uh, you know it just kind of moves us, moves us out, out of where we were and, you know, you know, we'll move into something, something different.	113	→	17
J: (Yup.)	231	↑	1

	<u>Verbal Message</u>	<u>Code</u>	<u>Direction</u>	<u>Duration</u>
B:	Good.	111	+	1
J:	You know, the biggest thing, the mistake was, you know, I guess I thought I, you know, I kinda...The guy kinda took me, got me when I was really down. That just, just really...	218	+	12
B:	But he's...	140	+	2
J:	[It took all of the effort not to strangle that guy right there on the spot. I'll tell you, it really did.]	233	+	4
B:	Well...	140	+	1
J:	[I didn't know what he was saying, what he was doing.]	233	+	2
B:	Well, you have a lot more control, uhm, you know, I guess maybe, maybe it's a good mixture for us. Because you don't, you don't overreact and I do. And, of course, after you left, you know, I just, uh, you know, I went down and really screamed at him. And uh,...you know, I felt really bad about it because I have a problem with...you know, that's my big character defect, anger. But, I think, you know, I just had to tell him, you know...like, you know, he's talking about his niece and his nephew and uh...,you know, I said who the hell's paying the rent around here. Your niece or your nephew or me? And uh, you know, but it...	111/ 113	↓ →	43
J:	The bottom line is like he said, this is my house.	212	+	3
B:	But I think the point is Joe, you know, maybe...	140	→	2
J:	Which is fine.	213	→	1
B:	Maybe you had to see that. You know, maybe in our relationship something like this was needed for you to understand, number one; how I felt when it happened to me with your mother. And, number two, it just points out to us, that we have to be a couple first. You know, it has to be a commitment to me and to you, to each other. And then our families are secondary. You know, and I think that, that's something that we never had before.	113/ 115	→ +	28
J:	But you see a few other things is too, if we weren't a couple first what would have happened	213/ 221	→ ↓	22

	<u>Verbal Message</u>	<u>Code</u>	<u>Direction</u>	<u>Duration</u>
	is if they (bleep)...at the time weren't, I would have said you can take yourself and your family and get lost. That's what would have happened otherwise...Don't you agree? I mean, isn't that what you're really saying? If I say that we weren't a couple, isn't that exactly what would have happened?			
B:	Well, it would have...	140	→	1
J:	[In other words, if I really know...]	230	↓	1
B:	[Well, yes, it would have caused a lot more problems. You know, uh,...]	133	↑	2
J:	[But instead of, you know, instead of drivin', driving a wedge...instead, it actually forced us closer together. Better, than in a long time. Really.]	233	↑	8
B:	Right. Well you've changed a lot... (both laugh)... You have...	111/ 113	↓ →	5 Pause=2
J:	(I'm...)	230	↓	1
B:	You have!	115	↑	1
J:	I'm sure I have but you know it's everyday when I see myself everyday, I don't see it. It's right...	213	→	7
B:	[Well, I see it, I see it. You know, just, you know just changes in,...you know, obvious changes in the relationship. And, uh, you know, we've come a long way.]	132/ 113	↑ →	10 Pause=1
J:	Yea, I know you know, its, its, you know, maybe that was the best thing that ever happened to us, that particular event, so...just have to see what happens.	211/ 213	↓ →	8 Pause=1
B:	You know, and as far as (bleeped) is concerned, and you know, I guess this is, this is uh like... how I feel about your mother. Maybe it's because it's the shoe is on the other foot. But I took (bleep) and I can say (bleep) is a sick person. You know, I think the guy is mentally ill. Just, just the way he treats...You know, he doesn't only treat you and me this way. He treats other people this way. But you know...	113	→	13

	<u>Verbal Message</u>	<u>Code</u>	<u>Direction</u>	<u>Duration</u>
J:	[Yea, but, you know, you know what it is, it's my ego I guess. You know, why the hell would this guy possibly treat me this way? It drives me nuts.]	233	↑	6
B:	Well, because he is a sick person. But see, I kinda felt that way when...you see my ego was involved when it was	113	→	3
J:	(But you...)	230	↓	1
B:	your mother	113	→	1
J:	(Yea.)	231	↓	1
B:	because I felt like, you know, like you say that I didn't really make any, you know, make any effort. But I felt I was making an effort. To me, that was making an effort. You know, when I would go in and I would chit-chat with her and it's very hard for me to make small talk when I...you know, I can talk to your father about uhhh, you know, the...uhm, the economy or I can talk to him about anything. What am I going to talk to your mother about? Fantasy Island?	113/ 123	→ ↓	33
J:	Love Boat (chuckles)	214	↑	1
B:	But that's the point!	113	→	1
J:	[I know what you're saying. I was just kidding.]	231	↓	3 Pause=4
B:	And I, I really did make an effort, I took up crewel. I figured, you know, maybe she'd think I was a little homebody. I, you know, I really did make an effort.	113	→	6
J:	Yea...The funny thing is that at the time I didn't perceive that you were. So, I, I uh... could see her point.	213	→	6
B:	[But, for me, that was an effort.]	132	↑	2
J:	(Yea)	231	↓	1
B:	Because, and that's, you know, cause I'm the type of person that I never did make...that... If I didn't feel comfortable or didn't like someone, I completely ignored them. I mean, uhm, I, I, I did make an effort, I tried.	113	→	11
J:	(Yea)	231	↓	1

	<u>Verbal Message</u>	<u>Code</u>	<u>Direction</u>	<u>Duration</u>
B:	However, like my feeling is now, uhm, you know, I'm over, I'm over that, that real hurt and that, I'm over a lot, you know, of the resentment that I had against your mother. But now, you know, I just don't feel like I have to be bothered anymore. And that's too bad and that's, maybe, you know, time will, will take care of that, and maybe after we're married and I have a more secure...technically a more secure position with,...with you. Then, uhm, you know, maybe I'm going	113	→	30
J:	(That changes too, yea...)	231	↓	1
B:	maybe I'm going to be able to, to, to be more apt to reach out	113	→	5
J:	(Yea)	231	↓	1
B:	uh, to her. 'Cause, you know, there won't be any more competition. You know, this subtle, unc...uh, subconscious competition, uh, you know, that I'm not good enough for her son. Any, she's gonna have to, you know, accept that fact that there's a marriage and it's not just, ah you know, a living together relationship that maybe she can break up. And, it will make a difference.	113/ 115	→ ↑	20
J:	Course, you know, I sometimes wonder because the fact that...she's, she's got married to Walter, she's...been told by my grandmother ever since then that she should never have ever married the guy. You know, so...	218	↑	10
B:	Forty years latter you know.	113	→	2
J:	[And my grandmother still tells her every time she goes over, you know...]	233	↑	3
B:	[Well, your grandmother is a real battle-ax.]	133	↑	2
J:	Oh, yea, for sure.	211	↓	2
B:	You know, there's no doubt in my mind. And I think really it's your grandmother that didn't like me. I bet that it's my, your grandmother talked your mother into not liking me, you know, 'cause, I don't think, and I'm very intuitive Joe,	113	→	11
J:	(I know you're...)	231	↓	1

	<u>Verbal Message</u>	<u>Code</u>	<u>Direction</u>	<u>Duration</u>
B:	and your, your mother did not always dislike me.	113	→	2
J:	Because you remember...we announced that we were going to get married, we called Florida because my mother and father we're in Florida at the time.	213	→	6
B:	Right	111	↓	1
J:	And the tremendous sound of the other end was	243	→	4
B:	[Silence]	133	↑	1
J:	(Oh) (chuckles) It was outrageous, but it's true, you know...	230/ 213	↓ →	3
B:	[Well, you know, you have a special place in your grandmother's heart and uh,...did she like Marie?]	133/ 123	↑ ↓	8
				Pause=2
J:	Ahhh	240	→	1
B:	At first?	123	↓	1
J:	No.	214	↑	1
B:	So,...and, you know, maybe Marie was the type of person that would, you know, play the game. I'm just not. You know, I,...I never will.	113/ 119	→ ↑	8

APPENDIX B

APPENDIX B

Summary of Coding and Weighting

Act Coded	Verbal	Weight	Nonverbal Speaker	Weight	Control Message	Nonverbal Listener	Weight	Inter-act Weight
1	219 ↑	16	210 ↑	9	↑↑ (↑)	100 →	1	26
2	123 ↓	6	112 ↑	18	↓↑ (→)	290 ↓	2	26
3	122 ↑	14	140 ↑	8	↑↑ (↑)	202 ↓	2	24
4	214 ↑	20	240 ↑	8	↑↑ (↑)	160 ↓	5	33
5	112 ↑	28	141 ↑	24	↑↑ (↑)	202 ↓	2	54
6	211 ↓	4	260 ↓	5	↓↓ (↓)	100 →	1	10
7	213 →	12	240 ↑	8	→↑ (↑)	100 →	1	21
8	122 ↑	14	142 ↑	16	↑↑ (↑)	260 ↓	5	35
9	112 ↑	28	141 ↑	24	↑↑ (↑)	262 ↓	10	62
10	213 →	12	211 ↑	27	→↑ (↑)	160 ↓	5	44
11	212 ↑	28	240 ↑	8	↑↑ (↑)	190 ↓	2	38
12	113 →	12	142 ↑	16	→↑ (↑)	260 ↓	5	33
13	213 →	12	240 ↑	8	→↑ (↑)	180 ↓	4	24
14	122 ↑	14	141 ↑	24	↑↑ (↑)	290 ↓	2	40
15	213 →	12	210 ↑	9	→↑ (↑)	100 →	1	22
16	212 ↑	28	240 ↑	8	↑↑ (↑)	100 →	1	37
17	113 →	12	141 ↑	24	→↑ (↑)	202 ↓	2	38
18	112 ↑	28	141 ↑	24	↑↑ (↑)	200 →	1	53
19	213 →	12	241 ↑	24	→↑ (↑)	100 →	1	37
20	221 ↓	2	240 ↑	8	↓↑ (→)	100 →	1	11
21	114 ↑	20	141 ↑	24	↑↑ (↑)	200 →	1	45
22	211 ↓	4	281 →	12	↓→ (↓)	100 →	1	17
23	215 ↑	24	210 ↑	9	↑↑ (↑)	100 →	1	34
24	111 ↓	4	142 ↑	16	↓↑ (→)	240 ↑	8	28
25	119 ↑	16	192 ↓	4	↑↓ (→)	200 →	1	21
26	230 ↓	10	241 ↑	24	↓↑ (→)	110 ↑	9	43

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Act Coded	Verbal	Weight	Nonverbal Speaker	Weight	Control Message	Nonverbal Listener	Weight	Inter-act Weight
27	213 →	12	281 →	12	→ → (→)	190 ↓	2	26
28	111 ↓	4	142 ↑	16	↓ ↑ (→)	202 ↓	2	22
29	113 →	12	141 ↑	24	→ ↑ (↑)	281 →	12	48
30	233 ↑	15	240 ↑	8	↑ ↑ (↑)	190 ↓	2	25
31	112 ↑	28	141 ↑	24	↑ ↑ (↑)	200 →	1	53
32	232 ↑	35	280 ↓	4	↑ ↓ (→)	100 →	1	40
33	113 →	12	190 ↓	2	→ ↓ (↓)	202 ↓	2	16
34	112 ↑	28	141 ↑	24	↑ ↑ (↑)	291 →	6	58
35	232 ↑	35	210 ↑	9	↑ ↑ (↑)	100 →	1	45
36	115 ↑	24	141 ↑	24	↑ ↑ (↑)	202 ↓	2	50
37	211 ↓	4	200 →	1	↓ → (↓)	110 ↑	9	14
38	115 ↑	24	141 ↑	24	↑ ↑ (↑)	200 →	1	49
39	233 ↑	15	240 ↑	8	↑ ↑ (↑)	160 ↓	5	28
40	111 ↓	4	160 ↓	5	↓ ↓ (↓)	200 →	1	10
41	213 →	12	241 ↑	24	→ ↑ (↑)	182 ↓	8	44
42	111 ↓	4	190 ↓	2	↓ ↓ (↓)	200 →	1	7
43	213 →	12	242 ↑	16	→ ↑ (↑)	100 →	1	29
44	113 →	12	140 ↑	8	→ ↑ (↑)	200 →	1	21
45	211 ↓	4	280 ↓	4	↓ ↓ (↓)	100 →	1	9
46	213 →	12	280 ↓	4	→ ↓ (↓)	170 ↓	3	19
47	112 ↑	28	151 ↑	30	↑ ↑ (↑)	200 →	1	59
48	212 ↑	28	280 ↓	4	↑ ↓ (→)	150 ↑	10	42
49	132 ↑	35	172 ↓	6	↑ ↓ (→)	200 →	1	42
50	232 ↑	35	200 →	1	↑ → (↑)	100 →	1	37
51	113 →	12	191 →	6	→ → (→)	202 ↓	2	20
52	231 ↓	5	200 →	1	↓ → (↓)	100 →	1	7
53	111 ↓	4	100 →	1	↓ → (↓)	200 →	1	6

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Act Coded	Verbal	Weight	Nonverbal Speaker	Weight	Control Message	Nonverbal Listener	Weight	Inter-act Weight
54	218 ↑	32	282 ↓	8	↑↓ (→)	192 ↓	4	44
55	140 →	2	140 ↑	8	→↑ (↑)	240 ↑	8	18
56	233 ↑	15	210 ↑	9	↑↑ (↑)	102 ↓	2	26
57	140 →	2	190 ↓	2	→↓ (↓)	200 →	1	5
58	233 ↑	15	200 →	1	↑→ (↑)	100 →	1	17
59	111 ↓	4	192 ↓	4	↓↓ (↓)	292 ↓	4	12
60	113 →	12	140 ↑	8	→↑ (↑)	292 ↓	4	24
61	212 ↑	28	242 ↑	16	↑↑ (↑)	190 ↓	2	46
62	140 →	2	140 ↑	8	→↑ (↑)	280 ↓	4	14
63	213 →	12	242 ↑	16	→↑ (↑)	100 →	1	29
64	113 →	12	140 ↑	8	→↑ (↑)	200 →	1	21
65	115 ↑	24	141 ↑	24	↑↑ (↑)	290 ↓	2	50
66	213 →	12	242 ↑	16	→↑ (↑)	190 ↓	2	30
67	221 ↓	2	240 ↑	8	↓↑ (→)	190 ↓	2	12
68	140 →	2	160 ↓	5	→↓ (↓)	200 →	1	8
69	230 ↓	10	200 →	1	↓→ (↓)	160 ↓	5	16
70	133 ↑	15	110 ↑	9	↑↑ (↑)	200 →	1	25
71	233 ↑	15	200 →	1	↑→ (↑)	160 ↓	5	21
72	111 ↓	4	160 ↓	5	↓↓ (↓)	290 ↓	2	11
73	113 →	12	111 ↑	27	→↑ (↑)	242 ↑	16	55
74	230 ↓	10	240 ↑	8	↓↑ (→)	110 ↑	9	27
75	115 ↑	24	111 ↑	27	↑↑ (↑)	200 →	1	52
76	213 →	12	280 ↓	4	→↓ (↓)	100 →	1	17
77	132 ↑	35	100 →	1	↑→ (↑)	290 ↓	2	38
78	113 →	12	192 ↓	4	→↓ (↓)	290 ↓	2	16
79	211 ↓	4	240 ↑	8	↓↑ (→)	160 ↓	5	17
80	213 →	12	240 ↑	8	→↑ (↑)	190 ↓	2	22

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Act Coded	Verbal	Weight	Nonverbal Speaker	Weight	Control Message	Nonverbal Listener	Weight	Inter-act Weight
81	113 →	12	140 ↑	8	→ ↑ (↑)	290 ↓	2	22
82	233 ↑	15	241 ↑	24	↑ ↑ (↑)	100 →	1	40
83	113 →	12	140 ↑	8	→ ↑ (↑)	292 ↓	4	24
84	230 ↓	10	240 ↑	8	↓ ↑ (→)	100 →	1	19
85	113 →	12	100 →	1	→ → (→)	200 →	1	14
86	231 ↓	5	200 →	1	↓ → (↓)	100 →	1	7
87	113 →	12	140 ↑	8	→ ↑ (↑)	290 ↓	2	22
88	123 ↓	6	190 ↓	2	↓ ↓ (↓)	290 ↓	2	10
89	214 ↑	20	240 ↑	8	↑ ↑ (↑)	100 →	1	29
90	113 →	12	100 →	1	→ → (→)	270 ↓	3	16
91	231 ↓	5	282 ↓	8	↓ ↓ (↓)	100 →	1	14
92	113 →	12	140 ↑	8	→ ↑ (↑)	290 ↓	2	22
93	213 →	12	240 ↑	8	→ ↑ (↑)	190 ↓	2	22
94	132 ↑	35	140 ↑	8	↑ ↑ (↑)	200 →	1	44
95	231 ↓	5	260 ↓	5	↓ ↓ (↓)	100 →	1	11
96	113 →	12	140 ↑	8	→ ↑ (↑)	200 →	1	21
97	231 ↓	5	200 →	1	↓ → (↓)	190 ↓	2	8
98	113 →	12	140 ↑	8	→ ↑ (↑)	290 ↓	2	22
99	231 ↓	5	242 ↑	16	↓ ↑ (→)	100 →	1	22
100	113 →	12	142 ↑	16	→ ↑ (↑)	292 ↓	4	32
101	231 ↓	5	240 ↑	8	↓ ↑ (→)	100 →	1	14
102	113 →	12	140 ↑	8	→ ↑ (↑)	200 →	1	21
103	115 ↑	24	140 ↑	8	↑ ↑ (↑)	200 →	1	33
104	218 ↑	32	281 →	12	↑ → (↑)	100 →	1	45
105	113 →	12	100 →	1	→ → (→)	200 →	1	14
106	233 ↑	15	240 ↑	8	↑ ↑ (↑)	100 →	1	24
107	133 ↑	15	190 ↓	2	↑ ↓ (→)	200 →	1	18

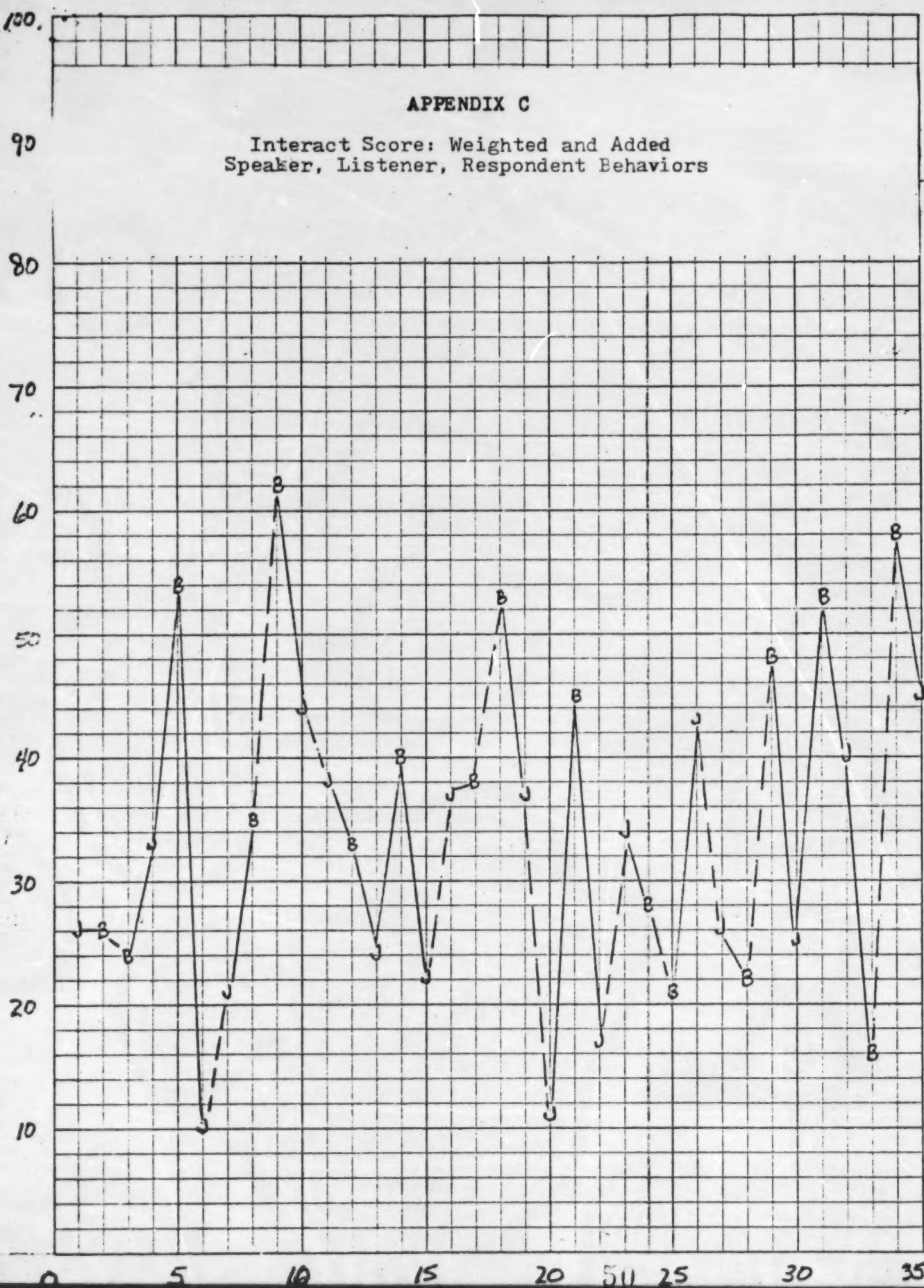
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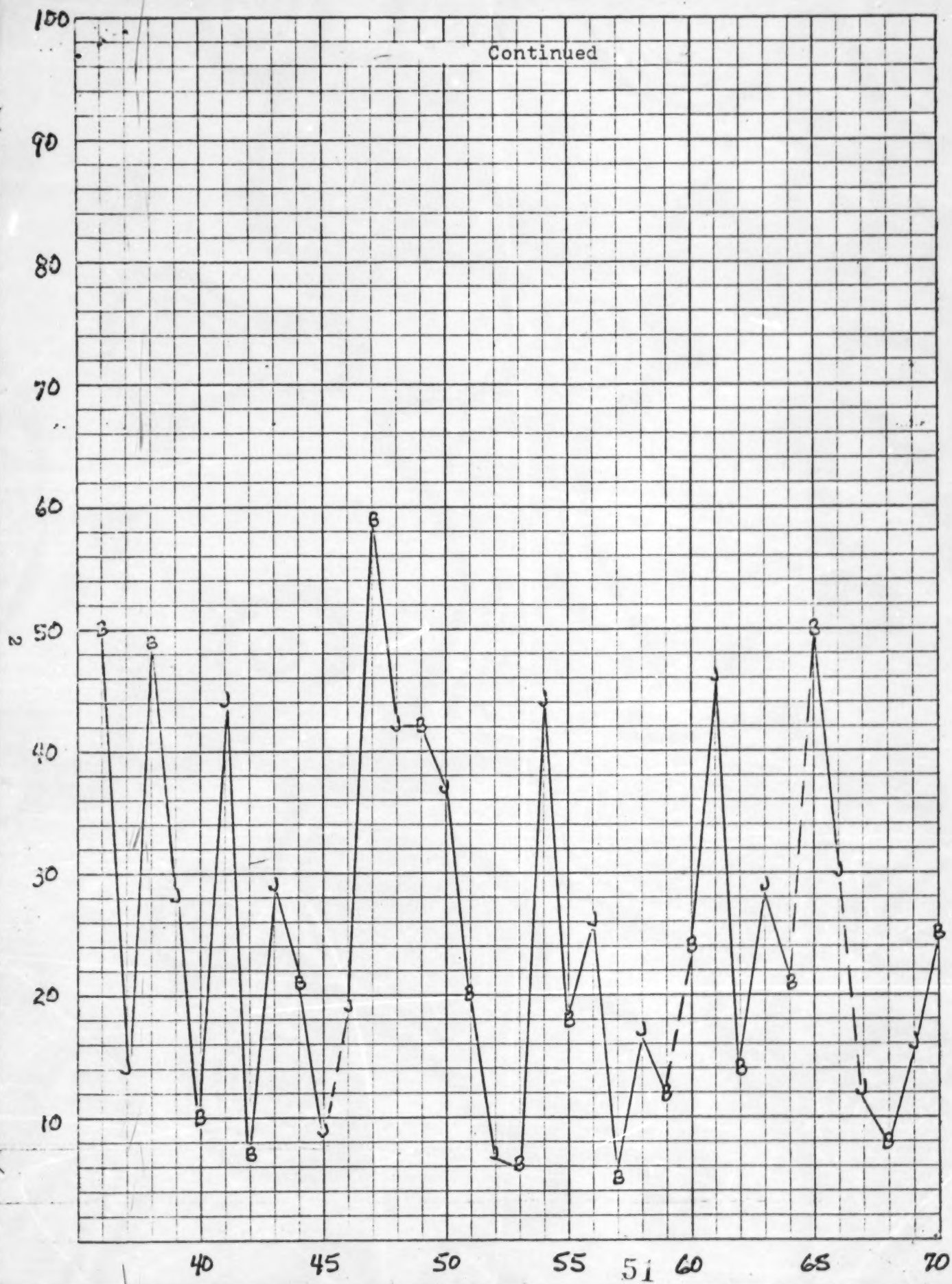
Act Coded	Verbal	Weight	Nonverbal Speaker	Weight	Control Message	Nonverbal Listener	Weight	Inter-act Weight
108	211 ↓	4	280 ↓	4	↓↓ (↓)	190 ↓	2	10
109	113 →	12	140 ↑	8	→↑ (↑)	290 ↓	2	22
110	231 ↓	5	202 ↓	2	↓↓ (↓)	100 →	1	8
111	113 →	12	190 ↓	2	→↓ (↓)	200 →	1	15
112	213 →	12	240 ↑	8	→↑ (↑)	190 ↓	2	22
113	111 ↓	4	160 ↓	5	↓↓ (↓)	200 →	1	10
114	243 →	3	242 ↑	16	→↑ (↑)	170 ↓	3	22
115	133 ↑	15	190 ↓	2	↑↓ (→)	200 →	1	18
116	230 ↓	10	270 ↓	3	↓↓ (↓)	190 ↓	2	15
117	213 →	12	240 ↑	8	→↑ (↑)	190 ↓	2	22
118	133 ↑	15	141 ↑	24	↑↑ (↑)	200 →	1	40
119	123 ↓	6	112 ↑	18	↓↑ (→)	200 →	1	25
120	240 →	2	240 ↑	8	→↑ (↑)	100 →	1	11
121	123 ↓	6	182 ↓	8	↓↓ (↓)	200 →	1	15
122	214 ↑	20	210 ↑	9	↑↑ (↑)	100 →	1	10
123	113 →	12	142 ↑	16	→↑ (↑)	200 →	1	29
124	119 ↑	16	142 ↑	16	↑↑ (↑)	200 →	1	33

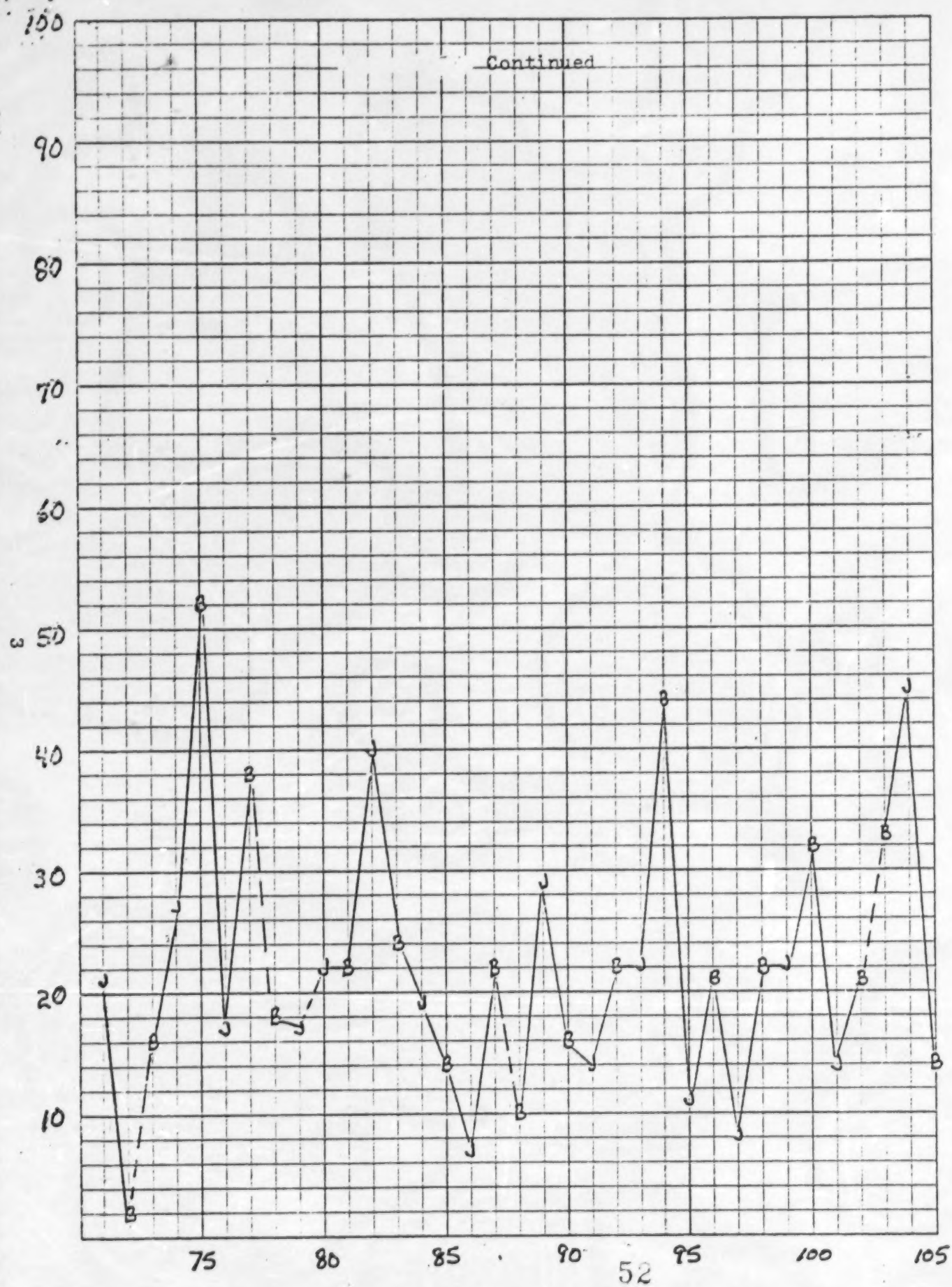
APPENDIX C

APPENDIX C

Interact Score: Weighted and Added
Speaker, Listener, Respondent Behaviors







100

90

80

70

60

50

40

30

20

10

Continued

110

115

120

125

53

